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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,145	03/29/2006	Leendert Van Der Tempel	GB 030180	3766
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EXAMINER				
PEACE, RHONDA S				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/574,145

Applicant(s)

VAN DER TEMPEL, LEENDERT

Examiner

Rhonda S. Peace

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-11 and 13-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date ____.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers in this National Stage application from the International Bureau (PCT Rule 17.2(a)), submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6-11, 13, and 15-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Hioki et al (US 6,987,284).

Pertaining to claims 1 and 18, Hioki et al discloses a method of fabricating a device as seen in Figure 1B comprising first layers **102** and **104**, and a second layer **103**, wherein the first layers **102** and **104** are flexible, and the second layer **103** has a corrugated structure and is in contact with the first layers **102** and **104** along a substantial portion of said second layer **103** so as to prevent fracture of the second layer **103** when the first layers **102** and **104** are deformed. The second layer **103** comprises a plurality of crest and trough portions, wherein the length of each crest and

trough portion is selected to prevent fracture when the first layers **102** and **104** are deformed to a predetermined radius of curvature. See Figures 1B and 14-18, col. 7 lines 35-49, col. 9 lines 28-39, col. 11 lines 8-39.

Concerning claims 19 and 20, Hioki et al further discloses forming cracks **301** in the second layer **103** by subjecting said layer **103** to a predetermined radius of curvature. Said cracks **301** are then chemically polished to form the crests and troughs of layer **103**, thereby teaching the length of the said crests and troughs are determined based upon the spacing of said cracks **301**. See Figures 11-12, 10 lines 18-47. Moreover, as shown in Figure 18, the length of the troughs and crests may also be determined based upon the average spacing between the cracks **301**, such that cracks **301** spaced according to the average spacing between cracks **301** occur along the peak of the said troughs of second layer **103**. See Figure 18, col. 11 lines 28-39.

Addressing claims 2 and 3, Hioki et al discloses the first layer **104** is a substrate, as layer **104** comprises a block layer of material on which circuitry is formed. See Figure 1B, and col. 7 lines 38-41. Additionally, Hioki et al discloses a third layer **101** in contact with said first layer **102**, wherein the third layer **101** comprises a substrate, and the first layer **102** comprises a coating on said substrate. See Figure 1B and col. 7 lines 35-38.

With regard to claims 6-8, Hioki et al discloses the second layer **103** as a coating of the first layer **102**, as the second layer **103** completely covers the first layer **102**. See col. 7 lines 35-38. Moreover, the first layer **102** exhibits a corrugated topography, as seen in Figure 1B. The second layer **103** comprises a series of adjoining troughs and

crests, wherein each trough and ridge exhibits substantially flat portions, as seen in Figures 1B, 9, and 10, for example. See col. 13 lines 16-36.

Pertaining to claims 9-11 and 13, Hioki et al discloses the second layer **103** has a waveform-type corrugated structure and is in contact with the first layers **102** and **104** along a substantial portion of said second layer **103** so as to prevent fracture of the second layer **103** when the first layers **102** and **104** are deformed. See col. 11 lines 8-15. Moreover, as shown in Figure 18, the length of the troughs and crests may also be determined based upon the average spacing between the cracks **301**, such that cracks **301** spaced according to the average spacing between cracks **301** occur along the peak of the said troughs of second layer **103**, wherein the length of each flat portion, as seen in Figure 18, is less than the average spacing between cracks **301**. See Figure 18, col. 11 lines 28-39.

Concerning claims 15-17, Hioki et al discloses the second layer **103** is formed of a thin glass (silicon dioxide) plate which is a transparent light-conducting oxide material. See col. 7 lines 35-37. Moreover, Hioki et al discloses using the above-described device in a display apparatus. See col. 1 lines 15-17.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hioki et al (US 6,987,284), in further view of Nanoux (US 3,936,341).

Pertaining to claim 5, Hioki et al discloses the display device as described above. Hioki et al discloses the third layer **101** may be formed of a thermoplastic polyimide resin. See col. 11 lines 40-50. However, Hioki et al does not disclose the use of acrylate lacquer for the adhesion layer **102**. Nanoux discloses the use of an adhesive acrylate lacquer provided on a thermoplastic resin. See col. 1 lines 60-64, and the abstract. It would have been obvious to one of ordinary skill in the art to form the first layer of Hioki et al with a acrylate lacquer, as Nanoux et al discloses such a material provides excellent adhesion properties with a thermoplastic resin and has good resistance to delamination. See Nanoux, col. 1 lines 54-64. Moreover, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design preference. *In re Leshin*, 125 USPQ 416.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hioki et al (US 6,987,284), in further view of Takami et al (US 6,697,131).

Addressing claim 14, Hioki et al discloses the display device as described above, including that the substrate **104** may be formed of silicon oxide or silicon nitride. See col. 7 lines 64-66. However, Hioki et al does not disclose the substrate **104** as being formed of the thermoplastic resin polyvinyl chloride. Takami et al discloses a liquid crystal display having substrate 1, 1', 2, and 2' upon which a plurality of electrodes 5a, 5a', 5b, and 5b' are formed. Moreover, Takami et al discloses said substrates may be formed of inorganic glass or organic compounds such as polyvinyl chloride. See Takami et al, col. 13 lines 65-67 and col. 14 lines 1-9. It would have been obvious to one of ordinary skill in the art to use polyvinyl chloride as a material for substrate **104**, as polyvinyl chloride is transparent, and provides electrical isolation to electrodes formed thereon, thereby eliminating the need for an additional insulator between substrate **104** and the electrodes **112** in the device of Hioki et al. Furthermore, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design preference. *In re Leshin*, 125 USPQ 416.

Allowable Subject Matter

Claims 4 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and *any intervening claims*.

The following is a statement of reasons for the indication of allowable subject matter: The applicable prior art does not disclose or reasonably suggest the device as described in either claims 4 or 12. The most applicable prior art, Hioki et al, discussed

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above, does not disclose or reasonably suggest the substrate 101 having a corrugated topography, and also does not disclose or reasonably suggest the substantially flat portions of said crest and troughs being interconnected to provide a continuous path for an electric current.

Conclusion

The following art made of record and not relied upon is considered pertinent to applicant's disclosure: Bharawaj et al (US 2005/0244614), Tseng et al (US 2007/0001202), and Satoh (US 2008/0055831).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda S. Peace whose telephone number is (571)272-8580. The examiner can normally be reached on M-F (8-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272- 2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rhonda S. Peace/
Examiner, Art Unit 2874

/Michelle R. Connelly-Cushwa/
Primary Examiner, Art Unit 2874